ORIGINS

• Journal of the Biblical Creation Society •

Volume 5 Number 14

In this issue:

Human Language 2

Ammonites, Mussels & Cockles

A Biblical Look at Early Civilisation

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Vol. 5 No. 14
January 1993

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Writing for Origins

Origins is looking for talented new writers, particularly those who have had experience in a specialised field of science or theology, in relation to creation, and who are in agreement with the aims and basis of the BCS. In addition, writers in a popular vein are needed, but accuracy and solid content are still essential. Any manuscripts for consideration should ideally be typed, double-spaced and sent to the Editor. Notes of guidance to authors are available on request. News items that may be of interest are also sought. We now welcome articles on disk in most formats, but 3ª″ HD, Wordperfect 5.1 is preferred; media will be returned after transfer of the file.

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Editorial

IT HAS BEEN INTERESTING to see yet another book, written by a non-Christian scientist and declaring that the theory of evolution is scientifically bankrupt. This is called *The Facts of Life: Shattering the Myth of Darwinism*, by a scientific journalist, Richard Milton. No doubt we will review it in due course, though we drew attention to it in the last issue, 5:13, in ‘Creation in the News.’ Not surprisingly, many of the arguments he uses are well known to the Biblical Creationist. It was extensively reviewed and summarised in *The Sunday Times*.

Another important book was published in the U.S.A. This is *Darwin on Trial*, by Philip E. Johnson. The author is a lawyer who was disturbed by the quality of the legal statements in some of the controversial trials in that country on evolution and creation.

The critique is thoroughly researched and is a devastating insight into evolutionary thinking. He shows that it is a philosophical system with no real empirical base. From the trial transcripts, he demonstrates that the National Academy of Sciences can only claim creation to be unscientific by writing a definition of science which deliberately excludes it. They say that the most basic characteristic of science is a reliance on naturalistic explanations.

Dawkins's mistake

The *Daily Telegraph* carried an interview with Richard Dawkins (August 31st). It is an interesting insight into his thinking. As we know well, he has no place for God in his thinking. But what about ethical and moral values? He says, ‘I have a strongly developed sense of good. But as a biologist I haven't a very well worked out story where that comes from.’ Though we object to his vigorous attacks on the Bible, in this case we commend his honesty. We pray that through this chink he may see the light of God. At the end of the interview (as quoted), he wrote, ‘I've contemplated a tropical rainforest and felt a tremendous sense of awe, of worship ...’ There was a pause. The interviewer wrote, he didn't mean to say that. ‘Not, of course, that there is anything to worship.’ A reminder of Romans 1:20. We pray for Richard that God will speak to him.

The way we think reflects the nature of the person. This is no profound human philosophical statement. It was a principle made by Christ Himself. He knows our hearts and minds. Many of us are concerned at the inroads of evolutionary theory, not merely because it is scientifically flawed, but also because of the consequences, especially for those who have no room for God in their thinking. The implications of Biblical Creationism are challenging both spiritually and socially. Unfortunately writers like Denton and Milton, who have seen the flaws in Darwinism, have no viable alternative—and so no hope for mankind at the deepest level.

The mind

There seems to be an increasing interest in the mind in the scientific world. In September, the *Daily Telegraph* made the subject the topic for its scientific page one Monday and the *Scientific American* for the same month had an issue on the brain. (The latter is fascinating reading and worth looking at). The first article is on the relationship between the mind and the brain. In it Prof. Gerald Fischbach admits that he does not know how to relate the two in a material sense. Where is the mind?

Fischbach goes on to comment that ‘the human brain [is] the most complex structure in the known universe, complex enough to coordinate the fingers of a concert pianist or to create a three-dimensional landscape from the light that falls on a two-dimensional retina ... The current version is the result of millions of years of evolution. It is difficult to understand the brain because, unlike a computer, it was not built with specific purposes or principles of design in mind. Natural selection, the engine of evolution, is responsible.’ Such reasoning is difficult to understand!

In 1969 Professor Noam Chomsky, a notable psychologist, made the comment, ‘The process by which the human mind has achieved its present state of complexity is a complete mystery. It is perfectly safe to attribute this to evolution, so long as we bear in mind that there is no substance to this assertion.’ Here is an example of poor scientific philosophy, particularly when there is a perfectly reasonable alternative.

In previous issues, Sylvia Baker has unlocked some of the mysteries of the eye. Darwin acknowledged that this remarkable organ bewildered him in terms of the theory of evolution. Another puzzle for Darwin was the mind. He said, ‘Can the mind of man, which ... has been developed from a mind as low as that possessed by the lowest animal, be trusted when it draws such grand conclusions.’ The *grand conclusions* of which he spoke were the consequences of his theory of evolution!

A dilemma

I wonder how our brethren who believe in creation-by-evolution cope with this dilemma without falling into the god-of-the-gaps trap? The problem grows for the Christian when we consider the Biblical teaching on conversion. If the mind is a natural product of evolution, not only do we face Darwin's logical problem, but we cannot explain 'the renewing of our mind' that results in the converted person. How can conversion be explained in a Biblical way? We are told to 'let this mind be in you that was also in Christ Jesus ...' If the process of evolution controls it, how is this possible?

This freedom of thought that is open to the creationist is displayed by our contributors in this issue. Tony Rummery contributes the second part of his paper on the development of language. As he demonstrates, the facts available are consistent with the Biblical record of the confusion of language at Babel. An evolutionary approach not only assumes that language developed from grunts and groans (whereas the Bible indicates the first man with a complete language resource), but requires a single primitive language. Babel seems to indicate a catastrophic change which may be make such a transition unlikely.

The issue of *Scientific American* referred to above also covers the brain and language. Antonio and Hanna Damasio show how complex the brain is in its control of language. A cup of coffee has information stored in many parts of the brain. When we take a cup of coffee, many areas of the brain are involved: visual and tactile representations of the cup's shape, colour, warmth, smell and taste are accompanied by the control of the movement of the hand and arm. Each involves a separate and simultaneous response from different regions of the brain.

Early history

The assumption that 'primitive man' could not communicate has led to the concept of *prehistory* and the assumption that we cannot know anything of this time. The Biblical record, of course, contradicts this. Jonathan Stephens gives us a helpful study of early civilisations as presented in the Scriptures. This is in accordance with papers previously published in *Origins*.

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Following this issue, we are to have a further change in the editorial team. Nancy Darrall has worked hard on the journal for the past few years, but pressures of work and study have made it necessary for her to step down. The BCS committee, and I am sure the readers, would thank her for her service. Paul Garner has kindly agreed to join the team.

J.H.J.P.

THE 1993 BACK TO GENESIS TOUR

Ken Ham and geologist Dr. Andrew Snelling will be touring the U.K. in June 1993. They will be presenting a series of seminars in each of six venues, on consecutive evenings, or Friday evening and Saturday afternoon and evening.

Genesis 1–11, An Overview
The Age of the Earth
Genesis and the Death of the Nations
The Grand Canyon
Creation Evangelism

Local committees are arranging each meeting on the dates shown and can be contacted at the respective addresses.

Swindon	31st May—2nd June	Contact P.O. Box 1427, Sevenhampton, Swindon, Wilts., SN6 7UF.
Crosskeys	4th—5th June	15 Fields Park Terrace, Crosskeys, Newport, NP1 7DA.
Leicester	7th—9th June	7 Hedington Way, Leicester, LE2 6HF.
Edinburgh	7th—9th June	Queenstown Bank Farmhouse, North Berwick, East Lothian, EH39 5AG.
Belfast	14th—16th June	4 Abbeydale Gardens, Belfast, BT14 7HG.
Liverpool	18th—19th June	61 Mayfair Avenue, Liverpool, L14.

News of Creation

The Fifth European Creationist Congress

A report from Frank J. Peachey

THE FIFTH European Creationist Congress was held from the 17th to 20th August 1992 at High Leigh Conference Centre, near Hoddesdon in Hertfordshire. The Congress was sponsored jointly by the BCS and CSM, who also shared the chairing of the proceedings.

This was the first time that this biennial event was held in the U.K. There were about 100 participants from many parts of Europe and elsewhere. We were particularly pleased to welcome Dr. Kouznetsov and his wife from Moscow. There was the usual packed programme of lectures—plenary sessions—and also some less formal round-table discussions on two consecutive evenings. Those who did not wish to participate in these discussions could choose to watch creationist videos. During the Congress there was a wide-ranging exhibition of creationist resources and literature by at least ten different organisations, including a display on the Flood and scale models of Noah's Ark. Each day's lectures were preceded by a devotional time of prayer and worship.

After introductions and greetings to visitors from abroad from the Chair, the keynote address—'Great God of Wonders'—was given by David C. C. Watson.

The miracles of Exodus support the literal interpretation of Genesis 1: they were supernatural, arbitrary and inexplicable by science. This was illustrated by a study of the crossing of the Red Sea, the manna, the turning of water into blood and the miracles at Mount Sinai. Naturalistic explanations of these events were shown to be untenable. It was also shown that the Fourth Commandment coincides with God's other chronometers, built into the solar system at Creation. Mr. Watson ended his talk by appealing to creationists to proclaim the doctrine of the literal six days creation as our central belief.

The Rev. Alan Hodson *(U.K.)*, who has degrees in theology and science, outlined the background to the present day denial by many theologians of the literal truth of Gen. 1–11. He stressed the importance of Biblical issues in creationism and said there was an urgent need for creationist expositors of the Bible.

Paul Ballance *(U.K.)* read a paper which set out to establish the historical authenticity of Gen. 1–11 in order to establish a true history of human origins thereby counteracting evolutionism, liberal theology and the challenge of the New Age movement. The origin of all pagan views, including New Age thinking, was traced back to Babel and Babylon. Recent discoveries of anomalies in the conventional chronologies of ancient Near Eastern history has provided an opportunity to align Biblical and secular timescales. If it can be demonstrated that Biblical history is exclusively and accurately the root of all human history, then the integrity of the Judæo–Christian account as the original and exclusive vehicle of God's revelation to mankind is also demonstrated, and therefore the truth of the six-day creation and the Flood.

Mr. H. Wiegers *(Netherlands)* read a paper on 'The Mythology of Science' which highlighted the contrast between scientific myths and Biblical truth; and distinguished six areas of reality and their relationship to their sources of information. The title of this lecture is taken from the book by R. J. Rushdoony (1967) which states that 'the purposes of modern science are increasingly those of

The High Leigh Christian Conference Centre, Hertfordshire.

magic, the exercise of total control ... Magic has thus again triumphed ... and science is governed by myth.' Science can be liberated from myths in two ways: by defending the truth of the Bible on the basis of its own contents; and by unravelling the myths of unwarranted prejudices, which prevent the free development of science.

In his lecture, 'On the origin of 'species',' Per Landgren *(Sweden)* dealt not with Darwin's classic treatise, but with the history of the meaning of the word 'species,' before and after Darwin. The young Darwin's pre–*Origin* view of species as fixed was not really Biblical; it was derived from Aristotle and Plato. It was a weak position, from which the great taxonomist Linnæus had moved as early as 1742, when it clashed with his observations. The Genesis 'kind' is not necessarily identical with the modern concept of species. Many natural scientists and historians of science wrongly identify the idea that species are immutable and static with a literal reading of the Genesis creation account.

Following this lecture was a round-table discussion of the species concept and the Genesis kind. Evolutionists' definitions of species were compared and contrasted with different creationists' definitions of the Genesis kind, *e.g.* F. L. Marsh's 'baramin'—a basic created type. Dr. Arthur Jones's important and comprehensive analysis of the Mosaic lists of clean and unclean animals (*Creation Research Society Quarterly*, 9 (1):53–57 (June 1972); and 9 (2):114–123 (September 1972)) was mentioned, as was his work on cortical inheritance which effectively demotes DNA. What rôle does behaviour play in defining a species? Surely behaviour would have influenced Adam's naming of the animals? Other questions included how should creationists view the numerous species of parasites. Dr. Scherer drew attention to the research work done by nine German creationist biologists on basic types of various families of plants, birds and animals using Marsh's criterion, the results of which are to be published in Berlin next year.

Graham Fisher *(U.K.)* gave a talk on the possibility that the Flood and the Ice Age/Earth division of Peleg's day were effected by the close approach of an icy moon-sized body. This idea was first proposed by D. W. Patten in *The Biblical Flood and the Ice Epoch* (1966). However attractive this scenario may appear, there are some serious problems with it, *e.g.*, any electrical charge on the ice would be too small to cause its deflection to the Earth's magnetic poles and, in any case, the heat from the kinetic energy associated with the speed of the approaching icy visitor would have vaporised all the ice or water before any could have been dumped on the Earth. However, geological evidence does suggest that there were post-Flood catastrophic episodes in the Earth's history.

In his lecture 'Cycles in Sedimentology,' Guy Berthault *(France)* described experiments performed by himself and P. J. Julien. They investigated how mixtures of differently-coloured large and small particles were deposited and separated when dropped into dry or liquid media, in still water, and in moving water. Berthault and Julien believe that their experiments show that superposed strata—such as occur in the Piedmont series of the Pyrenees—can result from mechanical factors such as segregation according to particle size, and not necessarily from successive beds. There is therefore a need to re-examine the conventional concept of stratigraphy in the light of these experiments. We were shown a video film of the experiments.

Happy memories of fell-walking in the Lake District were evoked (for this reporter) by some of the slides illustrating Paul Garner's *(U.K.)* lucid lecture on catastrophic volcanism in the Borrowdale Volcanic Group (BVG). Evidence was presented which indicated that the BVG rocks were emplaced, in a relatively short time, under water. The 6, 000 metre-thick BVG supposedly represents about 10 million years of Ordovician volcanism but we know that volcanic deposits can accumulate rapidly. For instance, up to 183 metres of volcanic strata were formed at Mount St. Helens, U.S.A., between 1980 and 1986. Long periods of time were not necessary for the deposition of the BVG, nor have they been demonstrated. The geological data are consistent with a Biblical Flood model.

In 'Gleanings from *Glossopteris*,' Dr. Joachim Scheven *(Germany)* said he had devoted 20 years to the study of coal formation. *Glossopteris* is a fossil plant, predominantly leaves, found almost exclusively in the Southern hemisphere. Coals derived from *Glossopteris* vegetation are always found in association with high-energy sandstones. Fieldwork on the Gondwana coal in Southern Tanzania and in South Africa was carried out by J. Scheven and his daughter (a geologist). The coals are purely allochthonous and must originate as pre-Flood floating vegetation. The main deposits of Gondwana coal—conventionally dated in the Permian period—should be referred to pre-Flood vegetation that was grounded at the recession of the Flood waters. With their partition into separate airchambers, the Vertebraria axes (backbone-like stems) of *Glossopteris* show evidence of an aquatic mode of life. This suggestion is supported by the total absence of seat-earths (petrified soils) under the Gondwana coal seams.

After the above lecture there was a round-table discussion of Earth history. This reviewed different models held by creationists, and attempted to identify a strategy for the future.

Dr. Dmitri Kouznetsov *(Russia)* gave a lecture entitled 'Theory of biofractionation of stable isotopes in Palæochronology.' A new approach to fossil dating was proposed based on the evaluation of data on the ratio of stable carbon isotopes, C–12 and C–13, in biochemical molecules extracted from fossils. Data from elemental analyses of fossils were also used. The model uses the fact that living organisms possess the ability to fractionate (separate) light and heavy isotopes. The relative age of the specimens, the co-existence or otherwise of the organisms, and the evolutionists claims that habitat changes are a major guiding factor in evolution can all be investigated. Fossils of dinosaurs from the U.S.A. and Siberia were shown to have the same relative age as human Cro Magnon fossils from East Kazakhstan. The U.S.A. dinosaur bones had been also radiocarbon dated by other laboratories at between 23,490 and 26,530 years old.

Paul Garner receives his award for giving one of the most appreciated talks.

In a highly detailed, technical lecture, Dr. Nigel Crompton *(Switzerland)* gave us some fascinating insights into the complex world of the living cell. He defined a cybersome as a large group of interacting proteins involved in causing an elementary biological event (*e.g.* hormone secretion) upon receiving a prearranged stimulus. The basis for the existence of cybersomes is not found in any physical or chemical phenomenon but in terms of information. Therefore, any theory on the origin of such units must include an explanation of the origin of information. The units (cybersomes) contain huge amounts of the most complex information which has its origin in design. *How* were they designed, or should we ask *Who* designed them? Cybersomes—fundamental units of biological life—can be shown to be responsible for cells' and tissues' normal reactions to the environment. Experimental evidence from homeotic mutation in certain plants shows that there is no known external factor capable of radically changing a species or its quintessence. Cybersomes do not define a family or species but are rather a means for it to be expressed, as harp-strings are not the melody itself but the means by which it is produced. Cybersomes may be said to control microevolution. But macroevolution, necessitating the creation of new tissues and organs and the restructuring of the organism, would require the simultaneous reprogramming of vast numbers of cybersomes. This is a process for which no existing genetic mechanisms have ever been described or even hypothesised.

In 'Evolutionary origin of Plastids?' Dr. Siegfried Scherer *(Germany)* described experimental work (including DNA sequencing) carried out by himself and colleagues to test the theory that some cell components in algæ are the remnants of an ancient evolutionary process. Chlorophyll-containing bodies—chloroplasts or plastids—in certain algal cells are supposed to be such remnants of what are called endocytobiotic events, for which there is some good evidence. However, about 15 mutations are required for what is actually a highly unlikely event. From probability calculations it appears that the Earth has not existed long enough for the occurrence of just one such event! The experimental data obtained by Dr. Scherer and colleagues suggests major problems for theories of the evolutionary origin of plastids, and can be interpreted in a creation model.

A German palæoanthropologist spoke on the subject 'In search of Eden.' Which fossils definitely belong to the genus *Homo*? The fossils record of the genus was reviewed and it was proposed that *H. erectus, archaic H. sapiens*, Neanderthals and modern man, as well as some fragmentary remains of *H. habilis* may be genetically related. The speaker has examined the fossil remains known as 'Lucy' and concludes that they are more ape-like than human. The feasibility of four current models of the place of origin of mankind was discussed. Data on the geographic and stratigraphic position of the fossils, their morphology, and current views of associated stone tool technologies were interpreted in terms of a tentative 'Migration/Cultural deficiency' hypothesis or 'Out of Noah's Ark' model.

Towards the end of the Congress we heard reports on the activities and prayer requests from creationist groups in : Bulgaria, Eire, France and Belgium, Germany, Greece, the Netherlands, Norway, Russia, South Africa, Sweden, Switzerland, the U.K. and the U.S.A. The Greek delegate—with the appropriate Christian name of Apostolos—was video-filming throughout the Congress proceedings for transmission on Athenian TV.

The Congress ended with a trenchant review by Dr. Siegfried Scherer, in which he made a number of important points under three headings: What is our current position? What are our aims? How do we achieve those aims? Creationists are not only a minority among Christians, we are also a tiny minority among biologists and Earth scientists. Being in the minority is no excuse for fanaticism or intolerance! We do have a positive advantage in knowing the true, Biblical history of origins but a major weakness is the existence of conflicting origins models among creationists. We should aim to be witnesses to other Christians and to unbelievers, proclaiming the truth about the origin and destiny of mankind with humility and tolerance. Many Christians are unaware of the dangerous consequences of theistic evolutionism. We should stick to scientific methodology and rigorous thinking, remember to distinguish scientific evidence from its interpretation, and not fear evolutionary interpretations. Even some creationist models might be wrong; God and His Word must take precedence over creationism!

Copies of the Conference proceedings are available from BCS at our Rugby address, price £4.50 (U.K.) or £5.00 (E.C. and overseas).

Human Language

Part 2: Its Diversity

Tony Rummery

IN MY LAST ARTICLE, I considered the uniqueness of human language. I now intend to consider some of the issues concerning the development of separate languages. Estimates of the precise number of languages spoken vary enormously. The standard view is that the number is 4,000—5,000, although some estimates place the number as high as 10,000. Part of this discrepancy is due to the difficulty in distinguishing language from dialect.

This can be a religious, social, economic or political issue as much as a linguistic one: Serbian and Croatian are to all intents and purposes the same language, although Serbian is written in a variant of the Cyrillic (Russian) alphabet and Croatian in the Latin alphabet: the Serbians have an Orthodox cultural background, the Croats a Catholic one. Danish, Norwegian and Swedish are sufficiently similar for my University to have offered an option in Danish and Norwegian for final year Swedish students, yet they are classified as separate languages. Scots English, however, is rarely considered anything other than a dialect of English. However, it has preserved some features from pre-Norman Anglo-Saxon, and has borrowed differently from French and German. Soldiers returning from the First World War claimed they could be understood by German prisoners if they spoke Broad Scots! It has had a literary tradition and it is possible to obtain dictionaries for it: matters that would lead some to a view that it is in fact a distinct language.

The classification of language and dialect can, therefore, be somewhat nebulous and open to alternative views, especially away from the well-trodden paths of European languages. What is clear is that some languages are more closely related than others and also that over time, one language can split into several. This is well known from European history, where, for example, we can see French, Spanish, Portuguese, Catalan, Italian and Romanian all stemming from Latin, a well-documented ancient language. The processes involved in the mutation of language can be complex, and dependant on politics and geography, as much as upon the tendency for language to change due to variant usages becoming a norm. Comparative Historical Linguistics, as the study of language mutation is called, is also not helped by the fact the pronunciation of languages that died prior to the invention of the tape recorder can be a matter of dispute. There are three main camps in the moves to reconstruct the now extinct Cornish language (a close relative of Welsh) and there are issues of orthography and pronunciation between those camps.

English as an example

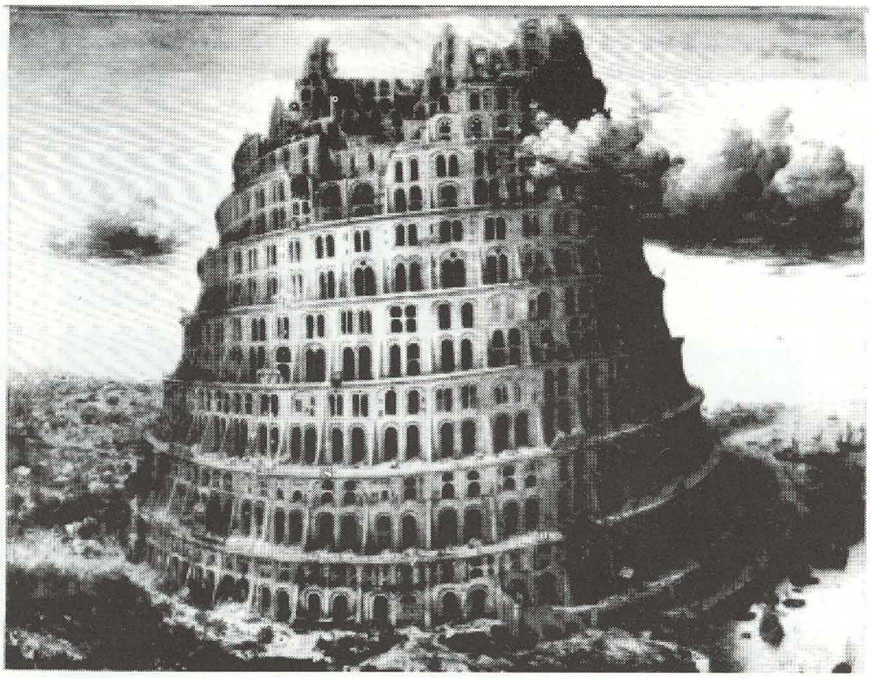
Perhaps a brief history of our own language will help to identify the main processes. The Anglo-Saxon and Jute invaders arrived in Britain in AD 449, as the Roman Empire retreated. The language that they brought with them was a Germanic language that derived from the same ancestral roots as modern German, Flemish, Dutch, and a 'cousin' of the Nordic language from which Norse and later Swedish, Danish, Icelandic and Norwegian were to develop. That language can be termed Old English (OE) or Anglo-Saxon. Contrary to popular understanding, the Latin influence in OE was minimal: that was to come later. The native Celts were displaced to Devon, Cornwall, Scotland, Cumbria and Brittany. 'Wales' comes from the OE *Weahlas,* meaning 'foreigner' and 'Cornwall' from *Cornu-weahlas,* meaning 'the land of the Cornish foreigners.' Even until the 17th century, Cornwall was sometimes called 'West Wales.' Cumbria and Cumberland are Anglicised forms of the Celtic *Cymru,* pronounced *cum-ree* meaning 'comrades,' which is the modern Welsh name for Wales.

Later, the Saxon kingdoms were Christianised and some 450 Latin roots found their way into OE at that time. Later still, in AD 787 and AD 991, the Danes arrived, controlling an area known as Danegeld, north of a line stretching from Chester to London, bringing some 1, 800 roots from Norse. The fact that the language of the Danes was similar to OE led to a fusing of the languages. However, some differences were present in the Danegeld. This can still be heard in the distinctive sound-systems of Northern and Southern English speakers: compare the word *bus* pronounced by a Surrey speaker with the Midlands or Northern pronunciation.

The arrival of William the Conqueror in 1066 led to the promotion of Norman French as the language of the Court, of the law and of State business; it is at this point that Middle English (ME) started to develop. Political frictions within the Norman kingdom led to the English-based Norman barons turning to ME as a mark of national identity.

Intermarriages with Saxon families became more common and gradually ME mixed with Norman-French. The word order had become more rigid and the grammatical endings retained in languages such as modern High German had been lost. By 1400, a major vowel shift had occurred, leading to the basic pronunciation rules that we have today. Up until then, for example, 'time' was pronounced *team*, 'do' as *doe*, 'now' as *noo* and 'so,' *saw*. Later, the hard *ch* sound as in the Scottish word 'loch,' and represented in English by *gh* as in 'through' was lost. By the time of Shakespeare, the modern English language had come into being. Although further changes have occurred since, the language of Shakespeare and the Authorised Version is still, with caution, understandable to native English speakers and recognisable as their own language.

In that brief overview of the development of English, we see some of the factors that govern language development: there is divergence from Old Germanic, convergence between OE and Norse after the Danish invasions and between ME and Norman-French after the Norman invasion. There are examples of grammatical and phonological changes and factors such as population migration, invasions and even political expediency have played a role in shaping Modern English.


The Tower of Babel, by Breughel.

By examination of the sound changes that have taken place in various Germanic languages, Jacob Grimm, of children's fairy story fame, developed a method of showing the way that consonants mutate between related languages, *e.g.* English 'father,' German 'Vater,' Latin 'Pater,' etc. Further systematic analysis has allowed linguists to understand the inter-relationship between various languages, and has allowed them to establish 'families' of languages, and even to develop 'rules' or 'laws' to understand the sound shifts that take place. By applying these laws, the features of the original proto-language can be postulated, even if that language is no longer in existence.

Earlier Languages

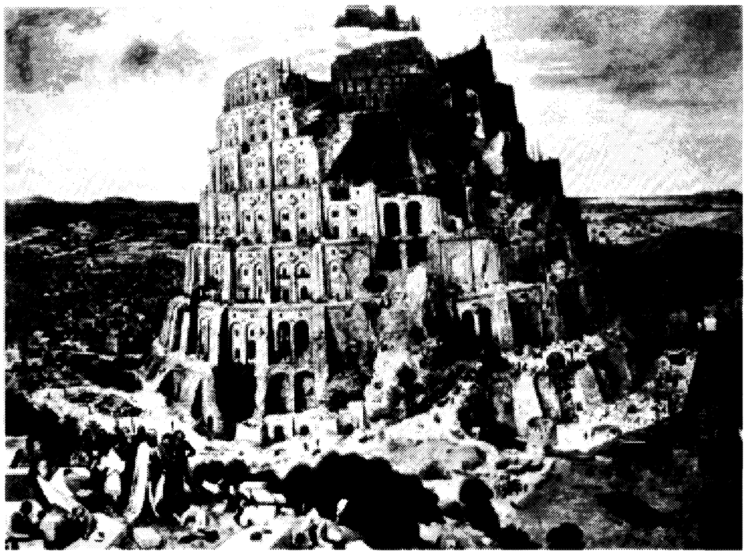
Most European languages are classified as Indo-European, but that 'family' also includes languages outside of Europe. As well as the Albanian, Balto-Slavic, Slavic, Germanic, Italic and Celtic languages of Europe, it also includes Indo-Iranian languages consisting of Indo-Aryan languages such as Hindu, Bengali, Romany and Sanskrit, and Iranian. Using the 'rules' of comparative historical linguistics, the proto-language of this 'family,' Proto-Indo-European or PIE, has been reconstructed. An example of how these 'rules' work is given in *An Encyclopædia of Language* (see references below) by showing the reconstruction of a non-existent language, Ruritanian, from six 'child' languages, A–F.

Many other quite distinct language families also exist. Uralic includes Finnish and Hungarian; Altaic includes Turkish and some of the languages of the southern republics of the old USSR; some linguists see a link with this group and Japanese and Korean, others would link it with Altaic. Sino-Tibetan includes the Chinese dialects; Niger-Congo includes Swahili; Semitic includes over 200 languages, extinct and living, including Arabic, Amorite, Phœnician and, of course, Hebrew. In addition, there are some 25 further language 'families,' including 15 North and South American families. There are also 18 'isolates' such as Basque and Filipino, that do not fit into any recognised 'family.'

How all these languages came into being has long intrigued mankind. A number of experiments were said to have been conducted in the ancient and medieval world, whereby babies were isolated from normal linguistic stimulus to see what language they would speak. James IV of Scotland (1473–1513) is said to have conducted one such experiment on two children, who supposedly spoke good Hebrew upon reaching a certain age, but that was unable to be confirmed by the contemporary historian! Other experiments have resulted in the children being dumb and incapable of then gaining language; that is the rather more likely outcome of such an experiment!

More modern research into finding a single proto-language has involved work by linguists to establish links between these families. Two Soviet linguists, Illych-Svitych and Dolgopolsky have claimed to have established a link between PIE and six other language families. Joseph Greenberg of Stanford University goes even further and groups whole families into six 'supergroups' without any attempt at reconstructing the links along the way. These theories have raised considerable controversy in the circles of academic linguists, and the verdict of their peers appears to be 'not proven.' Even if they are right, we are still left with the task of explaining how these six 'super-families' came into being.

The fact remains that we are dealing with very uncertain evidence. The lack of written records for many of the languages in view and the fact that reconstruction cannot be checked empirically must cause a cautious mind to beware of building on sand. It is not even as if the classification of languages is a precise science: alternative views may exist with regard to the position of certain languages in specific groups. Even the family divisions quoted above cannot be taken as universally agreed. The danger is that in postulating a predecessor for PIE, one has to accept that PIE is itself a postulated or extrapolated form, based on languages which themselves are not living languages. One also must be cautious when dealing with languages with little or no written history: good evidence for many of the language families may simply be missing.



The Tower of Babel, by Breughel.

Languages may be classified genetically or typographically. The genetic method attempts to categorise languages according to predecessor languages. It works well in Europe and Asia as there is a considerable body of written evidence of ancient languages. Where that is absent, typographical comparison may be used. This comparison is based on the way that the language's grammar works. There are three main types: isolating, where grammar is expressed solely by word-order; inflecting, such as Latin, where endings are used to express grammatical relationships; and agglutinative, where words are built up using morphemes (the smallest unit which has meaning) expressing a distinct grammatical feature, such as Finnish, Japanese and Swahili. Some would add a fourth type, which incorporates features of the last two.

However, this method does not actually line up with the realities of how languages are. English has features of all three types, so does German (a close relative) and Russian (a more distant relative). But these types exist in these languages in different 'strengths': it is not a clear on/off or yes/no. Matters of phonology, style, grammar and syntax may also contribute to the classification process. The sound system of two languages may be quite similar, but their grammar very different, and vice-versa. Exactly how to categorise two languages with regard to each other may be open to debate if one takes all factors into account.

The issues may be complicated by the absence of any historical evidence. Geographical proximity can cause languages from different sub-families to meld—as with Old English and Norman French, or to borrow extensively, as with Romanian and its neighbouring Slavic languages.

Environment also has an effect on vocabulary: Lappish has seven words for 'Reindeer,' depending on age and edibility, and a tribe who live by fishing have developed different words for 'you' according to the relative position of the speaker and the person addressed—very useful when working at sea in a small boat! This all adds up to the fact that instead of seeing neat divisions and sub-divisions between languages, we are looking at something rather fragmented and confused, more like a broken eggshell than a series of clean cuts.

The conclusion that I am left with is that there is no direct evidence of modern languages deriving naturally from a universal proto-language. The systems by which such a language might be postulated involve too much non-empirical evidence from reconstructed proto-languages to be put forward as anything other than hypothesis. The classification of language is problematic and open to some debate. The state of knowledge of linguists can take us back in time so far, but no further.

Back to the Bible

In the absence of clear, checkable evidence to the contrary, the description of the confusion of language at the Tower of Babel is, therefore, in my view in no way incompatible with the evidence uncovered by the science of linguistics. It is a clear example of how the Bible fills in the picture where science cannot do so.

The story of the Tower of Babel is in Genesis 11:1–9. Mankind had embarked upon this attempt to 'make a name' for themselves (v. 4) and their exploit was greatly assisted by the fact that they had one language (v. 1, 6). We are not told more than this about the original language in Scripture and we must be content not to know anything more. Some have suggested that it must have been Hebrew, but we have no warrant from the Scriptural evidence to suggest that. It may have been some sort of proto-Semitic, which stayed intact after the confusion, but it seems the best understanding from the text is to suggest that the original pre-Babel language was lost.

The actual languages resulting from the confusion may have been quite small in number, but we are not told how many or how few. One might be tempted to suggest that the resulting languages would line up with the proto-languages of the known language families, but again we are not told that in the text. We are told quite simply that language was confused by God. We are not under any obligation to believe that the result was either a small, or a large number of new languages. The confusion was followed by the various tribes being 'scattered' (v. 9). The geography of the immediate post-Flood earth would have assisted their dispersion. See issue 4:11 of *Origins* for an article by Michael Garton for a very helpful treatment of this theme.

We have no way of knowing timescales, but during and after the dispersion, the processes of linguistic mutation that I have discussed above would have started operation, and over the following years distinctives would have started emerging within the immediate post-Babel languages. Dialects and then further new languages would have emerged. Just as we cannot be dogmatic over the precise number of post-Babel languages, so can we be neither dogmatic over the pace of language mutation, nor make any assertions as to the pace of change.

Some commentators have tried to suggest that the confusion was limited in scope, such that not all mankind was affected, or that the means was a protracted process, but this really does not fit the text. God was dealing with a particular problem, and brought His judgement to bear with a specific, universal act which prevented the tower being built. It has also been suggested that the pre-Babel language had variations as well, yet Gen. 11:1 tells us precisely the opposite.

The Bible answers the questions poised by linguists as to how language variety originated, but objections may be raised by those not prepared to accept it as authoritative. A number of things can be said in support of the Bible's account. Firstly, it is entirely consistent with God's holiness and justice to have dealt with the presumptuous attitudes behind the Tower, so soon after His power and majesty had been demonstrated in the Flood. It is also consistent with His mercy. He did not deal with sinful mankind as they deserved. Imagine the sheer terror for a man on the day that this happened, then the relief that at least some still understood him, not least perhaps, members of his own family: 'In wrath remember mercy ...' (Hab. 3:2). As well it is consistent with His power. He who created the Universe from nothing and brought ten plagues against Egypt is able to perform such a miracle as the confusion of language.

Secondly, the event is validated in the New Testament. The outpouring of the Spirit in Acts 2 and the gift of tongues was a witness to the universality of the Gospel and the promise that in heaven the curse of Babel will be finally removed. That somewhat more recent miracle shows that God can indeed override in language matters just as He did permanently that day at Babel. Speaking in tongues is sometimes referred to as 'glossolalia.' Whatever view one may wish to adopt in the light of current controversies, and whether one prefers to view the tongues speaking in Corinth (1 Corinthians 12–14) as identical to Acts 2 or qualitatively different, most commentators would agree that Acts 2:8 has real languages in view. The term 'glossolalia' is understood by linguists to refer to experiences of ecstatic speech. A better linguistic term to describe the events on the Day of Pentecost would be 'xenoglossia,' which is used to describe an ability to speak an actual foreign language without having first learnt it—a rare event and, if encountered today, by its nature is difficult to prove. But this xenoglossia on the Day of Pentecost is surely a 'Babel in reverse,' as these untutored men were able to demonstrate in public an ability to communicate to the sceptical crowd in up to 15 foreign languages. It both looks back to God's judgement of Genesis 11, and forward to the return of Christ, and 'the healing of the nations' (Revelation 22:2).

Therefore, I conclude that Babel as recorded in Genesis is consistent with the power of God over His creation, is the best understanding of the development of languages, and in no way contradicts any available evidence from linguistic studies.

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Ammonites, Mussels and Cockles

The Changing Face of the Post-Flood Sea

Joachim Scheven

A WALK from Osmington Mills below the cliff towards Weymouth is an unforgettable experience. Slippery boulders, regarded a nuisance at first, soon attract the attention of the palæo-biologist. The source of some of these, a band of tough oolite at the right, gradually descends to shore level and reveals a magnificent shell bed of the ornamented clam *Trigonia clavellata*.

Trigonia (myophorella) clavellata.

Petrified clams on the shore

This shell must have abounded indeed! The home of these bivalves was not the British Channel, however, but a sea which we call the 'Jurassic.' Their valves are turned to rock. Slipped clay from above the Trigonia bed, washed clean by the tides, yields the double triangles of the flat oyster *Liostrea delta.*

Liostrea delta, with mould of an ammonite.

They too are petrified. Their lower valves may bear the imprint of an ammonite shell in the same way as modern oysters pick up the sculpture of the object on which they grow. So, oysters they are! There is nothing 'primitive' or in need of improvement about them. Further west, a rugged promontory of seemingly barren black clay contains, at closer inspection, a very different oyster, the heavy curved shells of *Gryphæa dilatata*, together with belemnites and the occasional copper-coloured ammonite. Many of the gryphæas have the white tubes of the worm *Serpula* attached to their undersides. Identical *Serpula* tubes with living inmates can be found wriggling beneath the loose flags of the rock pools nearby. At this spot they seem to be the only link to the petrified past! Their one-time hosts, however, the ponderous gryphæa shells of the badlands above, are totally extinct.

Underside of Gryphœa dilata, with worm tubes of Serpula.

Realising that the sea at our feet is of the same water that once teemed with the now fossilised 'Jurassic' shells one wonders in what manner such great faunal changes may have come about. The 'Jurassic' gave way to a 'Cretaceous' sea whose greenish sands are preserved above the delta oysters. And the 'Cretaceous' sea in turn gave way to the 'Tertiary' one. The shells of the latter appear in isolated pockets on top of the cliff. This Tertiary sea, although quite distinct from the earlier fossil marine habitats, harboured a wealth of different shells. But even this variety no longer exists in the British Channel. The conspicuous Prickly Cockles, *Acanthocardia echinata*, for example, that get washed up on the Weymouth beach represent only a tiny fraction of the one-time diverse of marine life that thrived across most of the then water-covered Western, Middle and Southern Europe.

The sequence of the geologic 'periods': not more than a succession of buried sea floors

What do we mean by 'Jurassic,' 'Cretaceous,' and 'Tertiary'? These names stand for episodes of earth history arranged in the order that can be recognised the entire world over. During the 'Jurassic,' the rocks of the Swiss Jura and those similar to them were formed. The 'Cretaceous' takes its name from the chalk deposits that were, like the Jurassic, also formed only once in earth history. The name 'Tertiary' has been coined to denote the position of those layers that come 'third' in the complete sequence of all water-laid rock units that were originally divided into three. According to this counting, 'secondary' rocks, including the Jurassic and Cretaceous, begin with two earlier units that are missing along the Dorset coast but are developed elsewhere: the 'Permian' with its marine Magnesian Limestone and the 'Triassic' with its marine Muschelkalk and similar rock formations that can be correlated with them on account of their fossil contents. The 'secondary' and 'tertiary' rock units have one thing in common. Scattered through the profiles, they contain buried sea floors which were inhabited by marine life communities for at least brief periods of time. In this respect they differ totally from the 'pre-Permian' geological systems where no such petrified sea floors exist. Rocks of the latter type, then, were obviously stages of marine life associations that re-assembled during the years, decades, or even centuries after the Flood

A reminder: without transport no deposition

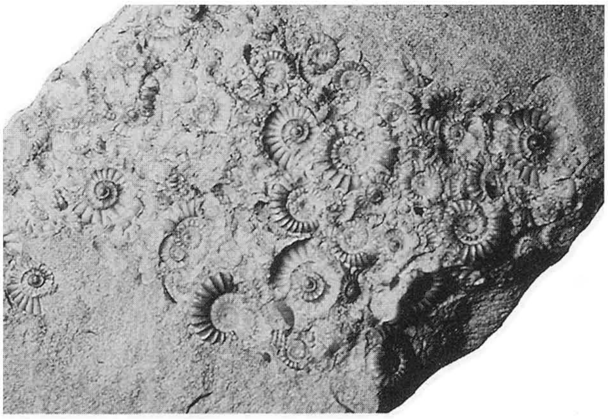
Any sequence of the Jurassic strata along the Dorset coast represents the sea itself only in part. We have been taught that where we find sediments, there the sea was once found. However, this is not true. Whether it is clay, sand, oolite, limestone, or shells that are piled upon each other, the materials must have been brought from somewhere. The real Jurassic sea, therefore, must be sought where these sediments originated from. The tightly packed Trigonia valves of the cliff at Osmington Mills, for instance, prove that the raw material of the whole ledge was suddenly collected in a subsiding depression. But the composing oolite and the shells can only stem from a more stable seafloor platform that lay some distance away. There the shells and the oolite had time to develop. Piles of fossiliferous deposits like the one from the Jurassic referred to above, signal the termination of entire ecosystems.

Jurassic cliff exposure at Lyme Regis. Each stratum of a supposed geological period represents only the fall-out of a water-suspended sediment burden.

Each stratum of a supposed geologic period represents only the more or less sudden fall-out of a water-suspended sediment burden. The superposition of many layers is by no means proof for the existence of the 'millions of years' assumed by the concept of historical geology. It monitors merely the tectonic movements beneath the basin from which these layers were spilt. Since true sea floors tend to be rare in most rock profiles, the characteristic zone fossils that succeed each other must have arrived from different areas that underwent tectonic disturbances within a fairly brief period of time. Such reasoning explains why they are now encountered at different levels. During the early years and decades after the Flood we must envisage shallow seas of considerable extent teeming with short-lived life communities that were to be superseded by others within not more than a few years.

The time when the sea became salty

As a rule, the sedimentary rocks of a quarry face or a cliff exposure were not the natural environments of the organisms whose fossils they contain. This is easily understood with ammonites which had a swimming mode of life. But the same is equally true for bottom-dwelling organisms like bivalves which may be found in the most unlikely 'environments' like clay, pure lime or dolomite. The formation of some of these sediments is, up until now, quite enigmatic. Certain deposits of the Magnesian Limestone sea, for instance, were saturated with copper salts at a toxic level. It is unknown where this poisonous admixture came from and how it was subsequently precipitated and thereby removed. This same sea, which existed across large parts of Europe shortly after the Flood, produced also dolomitic flags and dolomitic algal mounds on a scale never to be repeated in later post-Flood earth



Drift seam of ammonites. Lower Jurassic, Charmouth.

history. The Permian volcanism, slightly earlier, seems to have produced an enormous surplus of chlorine and sodium. This must have altered the overall salinity of the water that was going to become the Magnesian Limestone sea to an extent about which one can only conjecture. Evaporation over immense sand flats and collection of the salt crystals in shallow troughs through sheet floods has removed this excess salt from the biosphere of the earth and gives us our salt deposits now being exploited in many parts of the world. The excess salt of that time is thus kept under lock in the inexhaustible stores of the Permian and the Triassic.

Salt pseudomorphs in Triassic sandstone, Germany.

When the natural balance is upset: the one-way mass production of organisms and unusual minerals

The remains of a different limestone sea, the German Muschelkalk, are largely made up of neatly banked limestones and bands of marl. While some Muschelkalk layers are composed of little else than crinoid stem ossicles, and certain other shell bands and bonebeds betray their organic origin in a similar way, the derivation of the remaining gigantic amount of lime is a mystery. It may be hypothesised that atmospheric carbon dioxide dissolved into the Muschelkalk sea where it reacted with calcium ions to form lime. The latter was then transported into the Central European Muschelkalk basin. Judging from the extent of the crinoid and shell beds, filtering organisms must have lived in it in an incredible density, and in order to produce such a biomass the sea must have been warm and shallow. The iron-rich oolites of the Lower and Middle Jurassic must have been formed during an episode that drained vast amounts of iron into the sea.

Jurassic ammonite in oolite, France.

How the oolite globules formed is far from being understood. A similar stabilising mechanism as suggested earlier with the setting aside of salt from the Permian sea or the removal of carbon dioxide from the atmosphere in the form of limestone can be supposed. It is certain, however, that all of these were irreversible, unique processes which the sea had to pass through during its 'one-way' post-Flood history.

The quiet first century after the Flood

The early post-Flood water bodies—the Magnesian Limestone of the Permian, the Muschelkalk and the alpine Wettersteinkalk of the Triassic, the Jurassic sea, and finally the Chalk sea—were all quite shallow. It is important to keep this in mind, otherwise the fundamental difference between those transient marine habitats and the modern sea cannot be understood. There is plain geological evidence that from Permian to Cretaceous times there were neither high mountains nor deep sea basins of any extent. This situation changed abruptly when the vast sediment sheets of these successive seas were suddenly pushed together and folded up to form highlands or mountain chains. Enormous layered piles of skeleton-forming limy algæ (*Dasycladaceæ*) were thus accumulated in the Triassic massives of the Alps. Like the Muschelkalk organisms that lived at about the same time, this monotonous algal growth over millions of square miles must have been instrumental in keeping the carbon dioxide contents of the atmosphere, disturbed from equilibrium by the Flood, below a noxious level. The mere termination of a regime like this must have induced changes that altered the face of the sea worldwide. In developing these thoughts we allow the Biblical record to guide us when it states that there was a universal inundation slightly less than 4.500 years ago and that there followed tectonic upheavals on a global scale more than a century later. This is alluded to in Genesis 10:25 where it says that the earth was divided in the days of Peleg. This descendant of Shem was born in the year 101 after the Flood.

The Tertiary sea: comparable to one single large shore

The Tertiary sea is the direct link between the earlier marine post-Flood stages and the one large sea of the Present. The most salient feature of today's ocean basins and their land-encircled inliers is their depth. Peculiar deep sea creatures adapted to live in the lightless abyss populate the ocean floors at a relatively low density. The familiar animal diversity of our shell-strewn beaches, however, is in reality not at all typical for any of the oceans as a whole. The impressive number of mollusc species living along some shares of the Indo-Pacific ocean, or inside the Caribbean, is constricted to an exceedingly narrow belt of sometimes a few hundred metres only! Beyond that begins the deep sea. There is thus almost no point of comparison with seas like the Jurassic or the Cretaceous. Even up to the Tertiary, the conditions were basically different.

The large foraminifers known as nummulites, for instance, are nowadays confined to eelgrass-covered coral flats of Indonesia and the Great Barrier Reef. During the early Tertiary, similar habitats must have covered areas a thousand times greater! This is witnessed by the existence of nummulitic limestones in many parts of the world. Where else could this rock-forming quantity of nummulites have come from? The stringent conclusion is that much of the Tertiary sea was shallow, whereas most of the present sea is not.

Nummulites, the giant foraminifers that compose entire rock layers. Spain.

The sheer mass of the once-living, giant foraminifers is reason to suppose that they were part of a food web, whose members broke apart and died out after the populations of surviving nummulites shrank to the present insignificant level. In the Paris Basin, a conspicuous snail, *Velates schmiedeli*, always occurs together with nummulites. It seems to have lived on these shelly protozoans. The much greater diversity of Tertiarian shell life finds its explanation in the fact that the 'beaches' of the Tertiary sea were so much broader by far than the equivalent living quarters for molluscs along the coasts of today. A comparison may be drawn between the fringing evergreen forests of East Africa along moist river courses and the continuous lowland rain forest of the Congo Basin. The latter offers a home to a vastly greater variety of animal and plant species than the former could possibly afford. If animal populations do not achieve a minimum number of individuals in a climax community, they are bound to die out. A decrease of species since the Tertiary is therefore only to be expected. Practically all living shells, particularly bivalves, can be traced back to the Tertiary. It may also be stated with confidence that not a single new species has appeared since then. However, the number of extinct Tertiarian shells is very considerable. We may safely assume that their complete array composed much richer and more complex life communities in any one place than that which is met with nowadays, as relics dispersed over remote parts of the world. The snail *Campanile giganteum* which was up to 60 cm tall with some smaller relatives populated the sunny flats of the earlier Tertiarian sea across much of Western Europe. The only living representative, *Campanile symbolicum*, of modest 24 cm at most, survives along the tropical coast of Western Australia!

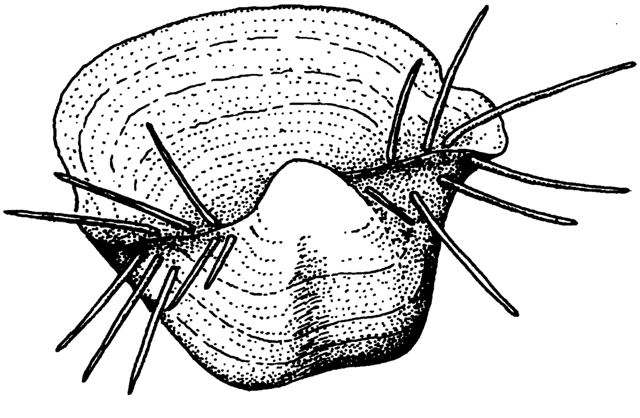
The gastropod Velates schmiedelli (extinct) that fed on nummulites. France.

In search of the pre-Flood roots of the fossilised marine successions

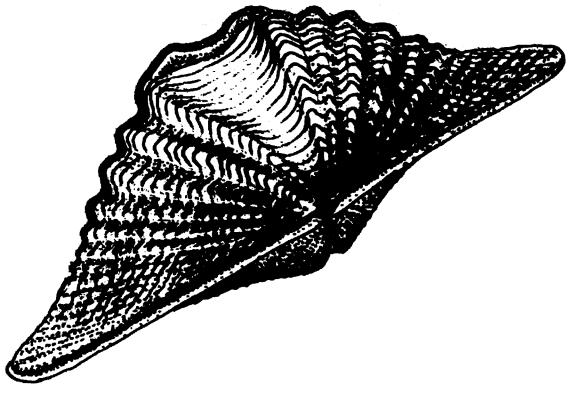
Two observations regarding the post-Flood marine faunas must be kept apart: the sudden appearance of each consecutive fauna with very few transitory forms that might link the one to the other; and the unusually broad range of variation amongst closely related species, particularly ammonites and bivalves.

The Permian, Triassic, Jurassic, and Cretaceous marine faunas are for the most part so distinct, that it can be surmised that they have arisen from separate stocks. What we see, however, are the remains of these eventually failing ecosystems which were already buried, not their incipient stages. It is therefore difficult to prove the hypothesis of their distinct origins. However, there are hints.

Permian: The highly monotonous Magnesian Limestone fauna contains some common shells that resemble pre-Permian marine organisms so perfectly, that the latter may be regarded as their pre-Flood ancestors. Reference is made to the brachiopods *Productus horridus* and *Spirifer alatus*, and to the bivalve *Pseudomonotis speluncaria.*

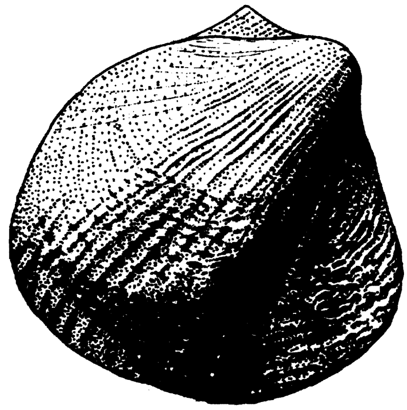


Productus (Horridonia) horridus.



Spirifer alatus.

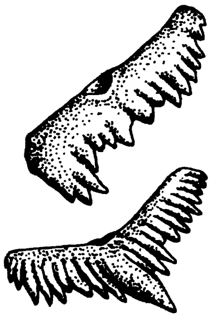
The same types are also known from localised Carboniferous limestones in Europe and North America, *i.e.* from rock deposits that on account of their lack of actual sea floors can be assigned to the Flood. The sheetlike distribution of these shells in the Magnesian Limestone across much of Europe, on the other hand, suggests that these organisms were also able to content themselves with the harsh and extreme conditions prevailing in the shallow water bodies from soon after the Flood.



Pseudomonotis.

Triassic: Similarly suggestive is the origin of the German Muschelkalk. The greater part of the shallow-spread sediments across Middle Europe came from the South-East. Accordingly, as we proceed in this direction, the number of fossil species increases. Two of these rare additional forms, the ammonite *Arcestes* and the bivalve *Monotis*, come into their own only much further away, in the red limestones of the alpine Hallstatt facies. This rock type occurs in localities as far apart as Austria, Greece, the Isle of Timor and N. America, but the outcrops are extremely restricted. True sea floors, like the ones in the German Muschelkalk, are entirely absent in the rocks of the Hallstatt facies. It appears therefore as if these isolated massives, or mere boulders that float in other rock types, are of pre-Flood origin and that it was their faunas that spawned the few adaptable species that were to be disseminated through the entire Muschelkalk sea. The contrast between the one single ammonite genus of the Upper Muschelkalk, *Ceratites*, and the several hundred named species of the Hallstatt facies cannot be greater!

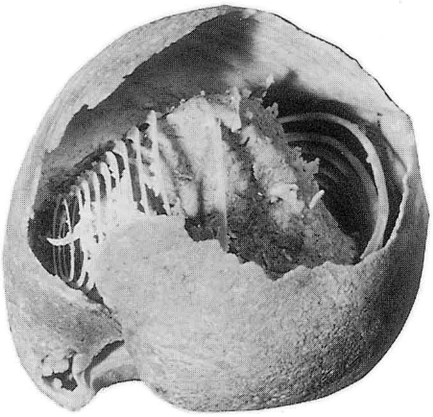
Jurassic: Although we know of some bivalve genera (*Gryphœa*, *Trigonia*, *Plagiostoma*) that seem to have passed unchanged from the Triassic sea to the Jurassic, the aspect of the latter is nevertheless so different, that a separate origin of the bulk of the Jurassic fauna may be assumed. The least conspicuous but probably greatest difference between the German Muschelkalk and the succeeding Jurassic is that the former contains conodonts and the latter does not. These tiny phosphatic 'teeth' and 'saws' continue practically unchanged from the Flood-laid 'Palæozoic' rocks to the Muschelkalk.



Conodonts

They seem to have been dispersed from the hypothetical Triassic 'mother rock,' the red Hallstatt facies, where they are especially common. But with the Jurassic and more recent sediments conodonts are entirely gone. The Jurassic sea, in contrast to that of the Muschelkalk, had therefore probably no connections to the extinct ecotypes preserved in the Flood-laid pre-Permian rocks. The fauna of the Jurassic is likely to have had an independent origin.

At first sight, any recognisable pre-Flood roots of the Jurassic fauna seem to be entirely lost. The fauna does not look at all 'ancient,' although it must be admitted that most of its creatures do not look especially 'modern' either. The presence of certain lampshells (brachipods), however, establishes at least some connection to forms otherwise only known from the pre-Flood Palæozoic. The genus *Cadomella* is almost as exotic in the Lower Jurassic as the appearance of conodonts would be. According to present classification, it belongs unequivocally to the order of *Strophomenidæ* which, in post-Flood marine deposits, was last heard of in the Magnesian Limestone with *Productus horridus*. Another brachiopod, *Spiriferina*, is equally reminiscent of its relatives in sediments of the Palæozoic.

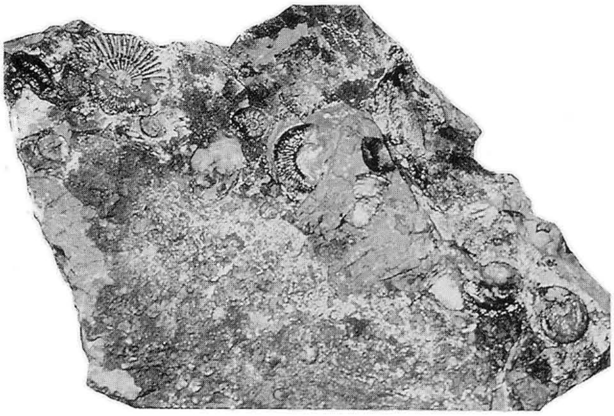


Spriferina with arm spirals. France.

As for the Jurassic ammonites, their independent origin from a pre-Flood stock can hardly be questioned. There are certainly no direct links to preceding geological systems below the Jurassic. It is true that two or three rather insignificant genera are sometimes said to have given rise to the host of often striking Jurassic species. At least one of these supposed Triassic ancestors, however, belongs to the red Hallstatt facies from which just one ammonite genus, *Ceratites*, escaped into the post-Flood Muschelkalk sea. It is highly unlikely that the same mysterious ammonite fauna of the alpine Triassic has not only spawned the Triassic fauna but the Jurassic ammonite fauna as well. A rather strange case of 'condensed' Jurassic index ammonites, however, may lead in the right direction.

Red limestone sills occur in a white limestone formation on the south side of the Rocca Busambra near Corleone in Sicily. These bands and lenses contain an astonishing variety of Jurassic ammonites from the 'Toarcian' to the 'Oxfordian' stage, *i.e.* an alleged timespan of 30 million years.

Leaving aside the precipitous 'explanations' of the advocates of conventional historical geology for this anomalous situation, it may be cautiously suggested that the contents of the Rocca Busambra sills and fissures may have had a similar significance to the vast Jurassic sea as the Hallstatt limestones appear to have had to the sea of the German Muschelkalk.

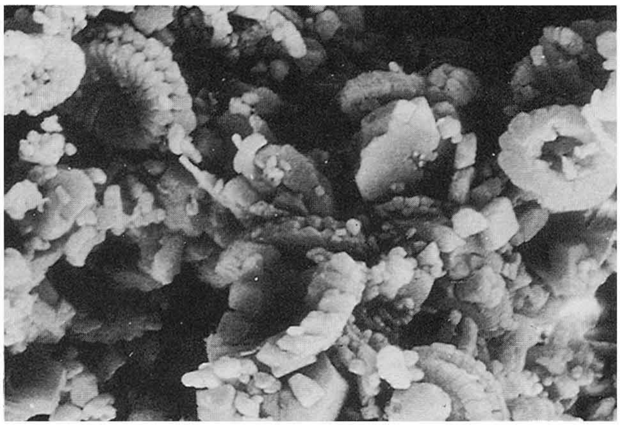


A rock slab from the Rocca Busambra (Sicily), with ammonites representing a supposed time interval of 30 million years!

Attempts to discover any pre-Flood beginnings of the Cretaceous or Tertiary seas have, until now failed completely. There are of course many connections between Jurassic organisms and those of the Cretaceous, as also between Cretaceous organisms and Tertiary ones. But very many species appear, as it were, out of the blue so that, again, separate ecosystems as their sources can be suspected.

Cretaceous: The local rudist reefs of the Cretaceous that are constructed of massive horn-shaped bivalves probably sprung up not very far from the places where their parents were dumped during the Flood. Maybe these original sites will be discovered one day! However, the widely spread chalk deposits are the remains of an excessive algal bloom (*Coccolithophoridæ*) with practically no connection to the antediluvian past. Algal bloom is of course an expression of a disturbed ecological balance. The chalk, therefore, represents a unique but

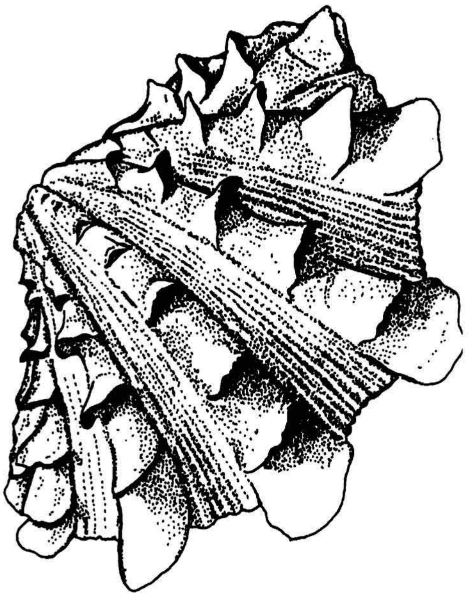
Rudist bivalves growing in a colony. Atzl-Reef, Austria.



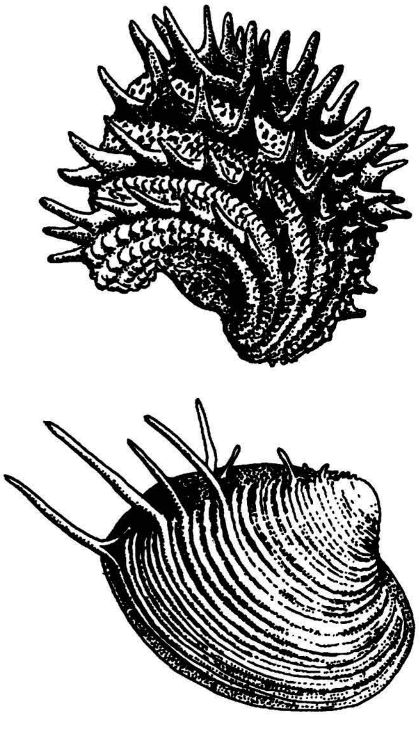
Coccoliths under a high power magnification (SEM). Cretaceous chalk consists of little else than these remains of green algæ.

short-lived post-Flood marine ecosystem that was suddenly drained when the mountains began to rise to their present height—after the birth of Peleg—*i.e.* in the second century after the Flood.

Tertiary: A rock type that would reveal the pre-Flood origin of the marine Tertiary is equally hid from sight. The Tertiary fauna is literally everywhere! Today's uniform shell life of (almost) nothing but mussels and cockles out to the remotest shores clearly belongs to this life community that has become terminal to the whole development. For this reason a broad statement only can be made about the origin of the present marine fauna. There are two centres of coral distribution in the present seas: the major one with 70 coral genera comprises the Philippines, Indonesia and the Great Barrier Reef; the minor one with only 20 genera extends across the Caribbean sea. Water temperature and currents alone cannot be responsible for this unusual distribution. Instead, we are presumably close to the pre-Flood origins of the Tertiary sea where most of the coral species are now concentrated. In accordance with these two distinct coral centres there are also two distinct bivalve faunas, the Indopacific one and the Caribbean, which would reinforce this thought. A third bivalve fauna, that of the Mediterranean, remains outside our consideration here. This third fauna is inferred from the high percentage of fossil Tertiarian endemics, *i.e.* of species concentrating in this region of which relatively few only have survived in the present Mediterranean or found their way to the shores of the Eastern Atlantic.



A Tridacna clam from the Indo-Pacific.



Two bivalves typical for the Caribbean and the Pacific coast of Middle America: Arcinella (above) and Pitar (below).

On the 'making of species': polymorphism versus evolution

The variation of shapes mentioned above among many of the Jurassic and Cretaceous molluscs requires specific attention. The cumbersome names of innumerable ammonite genera of the Jurassic could be reduced to relatively few only if the natural tendency to polymorphism among ammonite populations was sufficiently understood by palæontologists. Classifying different shell shapes is of course a matter of principle. However, after more than a century of 'splitting' of species for the sole purpose of advancing the cause of evolution there should be the courage now of 'lumping' these species into bundles of coexisting morphs so that the fact of creation is thrown into relief. If the successive post-Flood faunas sprang up independently, as it appears to have been the case, and if the populations within these successions diversified within the boundaries of their created genetic potential, then the idea of an organic evolution becomes obsolete. Examples and details of the post-Flood polymorphism among marine molluscs cannot be discussed here. The palæontologist who is able to read between the lines will find a rich source of information about such diversification in the volumes of the *Treatise on Invertebrate Palæontology.*

Some of this polymorphism may have had to do with the influence of the ever-changing chemistry of the post-Flood sea, especially with regard to its salinity. Genetic drift will also have played a part. This latter is the most likely explanation for the successive appearance of the various 'species' of the Muschelkalk ammonite *Ceratites* within the same Muschelkalk sea. Polymorphism, whether expressed by different morphs within interbreeding populations or among diverging lineages that have ceased to reproduce with each other, is the only real 'evolution' that deserves that name!

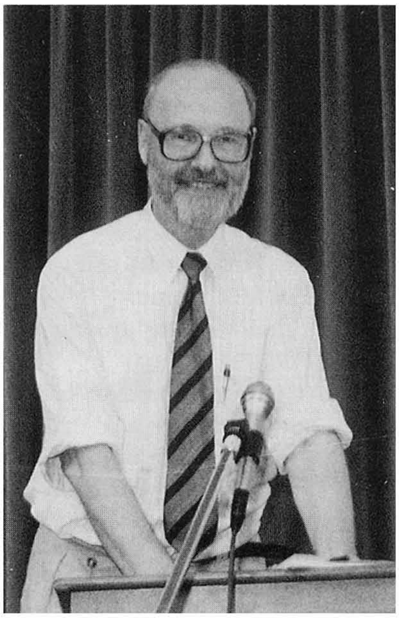
The disturbances caused by the Flood: key to an understanding of index fossils

One more observation should be mentioned that may demonstrate the transient character of each of the post-Flood seas described above. Index fossils that are used to identify the individual sediment units tend to be both common and uniform. Although it may be assumed that most of these fossil layers have been formed by selective accumulation under moving water, the dominance of only one or a very few species in each case is striking. The most straightforward explanation for such dominance is mass production of these organisms at a certain time. This brings out an interesting point. Mass production is always an indication for a disturbed ecosystem. If such an excessive increase of single species at the expense of others was the rule in the geological past, then such disturbances of the marine eco-systems must have followed each other in relatively rapid succession. Population explosions—algal bloom as an example—are brief by definition. Consequently, this past cannot have lasted such enormous amounts of time as is generally assumed. The changing index fossils, on the contrary, are sure proof that the world has hastened through a period of recovery from universal devastation which the Bible reveals to have been the Flood of Noah. The succession of marine shell life, of ammonites, mussels and cockles, can be best interpreted in this way.

Summary

- There are deposits of five different post-Flood ecosystems:
  - Magnesian Limestone (Permian)
  - German Muschelkalk/Wettersteinkalk (Triassic)
  - Jurassic
  - The Chalk Sea (Cretaceous)
  - Tertiary to Recent

  Each of them are characterised through distinct marine index fossils
- The deposits of the above are, as a rule, not the remains of stable sea floors but must be mainly regarded as sediments that were shifted about when the shallow post-Flood seas moved across the continents or were suddenly drained away.
- Some members of the successive marine ecosystems can be traced back to pre-Flood communities, *e.g.* to the marine Carboniferous and the Red Hallstatt limestone of the Triassic The pre-Flood origin of the marine Jurassic, Cretaceous and Tertiary communities is less pronounced. The Cretaceous and Tertiary life communities probably spread from pre-Flood centres of coral reef growth.
- The change of marine index fossils from the Magnesian Limestone to the Tertiary is the expression of an ecological succession as can be observed in disturbed ecosystems of today, although on a smaller scale. Since the mass propagation of a few favoured species is always the result of unstable conditions that are short-lived, the ecological interpretation of index fossils, as outlined above, makes the assumption of geological 'ages' unnecessary.



THE AUTHOR

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A Biblical Look at Early Civilisation

Jonathan Stephen

THROUGH my studies in social anthropology and looking at some of the different tribal situations around the world, there seems to be almost universally a kind of folk memory of some kind of advanced civilisation that lived in a golden age that has died and disappeared. We have all heard stories, for example, of the age of Atlantis, a civilisation which sank beneath the waves. World-wide, it is most interesting that you can go from China to Greece, from America to India, and there are legends of this so called 'golden age' which was destroyed by some great catastrophe.

An Authentic Window on the Antediluvian World

Now Bible believing Christians must admit that running through these myths there is some vein of truth, because in the second half of Genesis chapter 4 we have an intriguing picture of what the old world was like. In fact these few verses are almost the only authentic picture of the antediluvian world that we have, that is for those of us who recognise the Bible to be the Word of God.

Now this antediluvian world differed from our own very dramatically. I am not going to go and look through all the differences. Many of you here have read the *Genesis Flood* and books like that. I am very attracted to the thesis that natural observations fit well into the biblical data. Nor am I going to look at those or pretend to expound them. But I think we would all agree that the world before the Flood had to be a very different world from the one in which we now live. Men lived to amazing ages; the average age of those recorded in Genesis 5 is over 900 years. There are hints in Scripture that they were considerably taller in stature and stronger in build, than man today. Again, the same ideas recur in the myths of other nations; these ideas that these people were stronger and bigger with stories of giants. All of this is in folk memory, which we can trace back perhaps to certain strains even in the book of Genesis.

So we can see that not only did man live for a long time and was stronger, but we can see also that the population grew very rapidly. Indeed the population of the world before the Flood is reckoned by many creation scientists to have been very large.

If you add together all the ages of the patriarchs in chapter 5 and so on, and if you assume no gaps in the chronology of these early genealogies, the Flood took place 1,656 years after the Creation. Henry Morris and others have worked out in very simple mathematical terms that by that time after the Creation it would have been quite feasible, on a conservative estimate, for the population of the world to have reached some phenomenal figure, in the region of 7 billion. That is a figure which will not be reached again until after the year 2,000 in the new world in which we live. So we must not consider the people who were lost in the deluge as just some small pocket of people. Again, it is likely that the population was distributed worldwide. It is likely that travel would have been easier then because the surface area of the world would not have been covered by water to the extent that it is today.

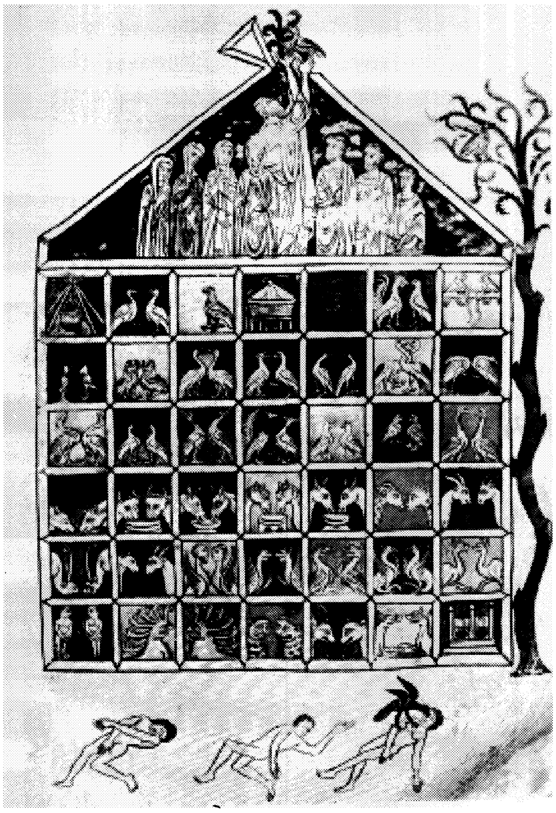
Antediluvian Culture

We need to remember that they were city dwellers: Cain built the first city in Genesis chapter 4 verse 17. Again, there was this development of animal husbandry, (verse 20), a metal industry (chapter 4, verse 22), appreciation of fine arts like music (verse 21), poetry (verses 23 and 24). Obviously they had writing if they were composing poetry and chapter 5 verse 1 talks about a written account of Adam's line that Moses refers to suggesting that here he was probably using original source material that is not in existence any more.

All of these things show us that these men and women who lived in the antediluvian world, the world before the Flood, were very far from the evolutionary picture of unsophisticated prehistoric cavemen. These people very probably had technology skills that took hundreds if not thousands of years to be recovered. But tragically that world of long ago has even more striking resemblances to the world which we know today than these things I have just been mentioning. Morally and spiritually, for reasons which the story reveals, these people grew so corrupt, and they grew so godless that the Lord God could no longer permit their existence. These are the 'days of Noah,' a sort of shorthand code that is adopted in the Bible. In fact, throughout the Bible and not just in Genesis, this is an expression that God uses when he wants to refer to the dreadful period leading up to the Flood.

The Days of Noah

Although it refers to the lifetime of Noah, nevertheless it is the first 600 years of Noah's life which leads to the Flood that are referred to in this particular way. We read in the second letter of Peter 'that God waited patiently in the days of Noah.' Sometimes in the history of the new world, man's sinfulness re-asserts itself and we have to think about these words. In the Old Testament sometimes you have a reference back to 'the days of Noah.' There is a reference in Isaiah, for example, where God refers to the way in which Israel is going against God's Laws, as making Him remember 'the days of Noah.' Again, when Israel, by her wickedness was forced into exile, God says He is reminded of what took place and how man corrupted himself before the Flood. Twice in the gospel the Lord Jesus Christ makes the very spine chilling prophecy 'as it was in the days of Noah so it will be at the coming of the Son of Man.' Therefore there is this tremendous practical relevance, as Christians, and we want to find out as much as we possibly can from the Word of God about the days of Noah. According to the Scriptures, there are great echoes and great parallels between those days and the days in which we ourselves now live.



The Ark, from the 12th Century Commentary of Beatus on the Apocalypse.

The Way of Cain

Let me briefly trace the way in which the old world developed up until the days of Noah, and through that time. It is important to realise that from the beginning it was a divided world. In the folk memory of the nations people will look back on a 'golden age' but that isn't the case because sin was in the world during that period. We learn from Genesis 4 and 5 that two distinct civilisations developed and the evidence of this is very clear in the Scriptures. The one sprang from Adam and Eve's first son and they followed their father and went as Jude puts it, 'the way of Cain.' We find that the Cainite civilisation (not Canaanite) described for us in Genesis 4 verses 16–24 was a totally secular society. Here is man existing with no reference to God; it was a time of technological and of artistic achievement, of music, metal work and poetry, as we have already seen. This proves that great technological and artistic developments and achievements are possible without God, but that they tend always to depravity.

Like Cain himself, the civilisation he founded was condemned to wander the earth, restless and aimless, engrossed with the things of the world. This tendency is summed up in the life of one of the descendents of Cain, a man called Lamech who probably lived at the dawn of the days of Noah, that 600 years period leading up to the Flood (Genesis 4 v 19). We read that this Lamech married two women, one named Adah and the other Zillah. He was the first bigamist recorded in the Word of God. We read that Adah gave birth to Jabal and he was the father of those who lived in tents and raised livestock. His brother's name was Jubal and he was the father of all who played the harp and flute. Zillah also had a son Tubal-cain who forged all kinds of tools out of bronze and iron; Tubal-cain's sister was Na'amah.

> 'Listen to me wives of Lamech, hear my words; I have killed a man for wounding me, a young man for injuring me; if Cain is avenged seven times then Lamech seventy-seven times.'

It is rather a vicious and sadistic poem. Lamech's son had discovered the art of making metal tools and here is Lamech intoxicated by the possibilities for revenge that are opened out as a result of these things and he challenges anybody to touch him. What he is virtually saying in this poem is this: 'I can do more in the way of avenging myself than God can do in protecting Cain.' He is challenging the promise of God. You can see in that poem, perhaps, a typical specimen—preserved for us by the Spirit of God—to give something of the spirit of the age. You can see there the brutality; you can see there the violence. Here too there is an unbelievable arrogance, a studied defiance of God.

Remember that in Job we are told what the people who were swept away in the Flood thought. The men washed away by the Flood said to God, 'Leave us alone; what can the Almighty do to us?' (Job 22 verses 17, 18). Job comments on these days, on the defiance of the antediluvian world against God, in that, even though God blessed them with many gifts of His common grace and goodness, this Cainite civilisation denied His providence and braved His judgements (Job 22:12–18). The way of Cain began and ended in bloodshed, worldliness and infidelity.

The Way of Abel and Seth

It is with a sense of relief that we turn away from the evidence about the Cainite civilisation to the civilisation which ran parallel to that of Cain's. This one stemmed from another child of Adam and Eve. Genesis 4 verse 25 tells us of the beginning of this other civilisation. We read in verse 25 that 'Adam lay with his wife again and she gave birth to a son and named him Seth saying God has granted me another child.' Then the text adds very significantly, 'in place of Abel since Cain killed him.' So here is the other line, the Sethite line, which is being brought to our attention. Now Seth was not born sinless; he was born in sin as a son of Adam. But the words of Genesis 5 verse 3 are significant, 'After Adam had lived 130 years, Adam had a son in his own likeness, in his own image, and he named him Seth.' So here is a person who was born in sin, but it was Seth who was the second link in the human chain from which finally the Messiah was to be born.

How different is this Sethite civilisation in all the details given of his history from the end of Genesis chapter 4 into chapter 5. There is no more of the boasting in human accomplishment that you find in that account of the Cainite civilisation. It is very different in tone and deliberately so. Very soon organised worship began to manifest itself among the Sethites. In Genesis 4 verse 26 tells us that at that time 'men began to call on the Name of the Lord.' No doubt there was an altar, sacrifice and prayer. We can look at some of the men who were in that godly line. We read of the seventh from Adam who was Enoch. Enoch walked with God, then he was no more because God took him away (Genesis 5 verse 24). So highly does God regard him, that, according to the account here in the Scripture, he was snatched into heaven bodily without dying.

Enoch's Testimony

It is a rather remarkable fact, that, by the power of the Holy Spirit, we have preserved for us a sample of antediluvian preaching. We find this, not in the book of Genesis, but in the book of Jude. We have an extract of Enoch's preaching preserved for us. It is the only preaching to survive from the old world, so I suppose we should consider it with a great deal of respect and with great curiosity as the Bible tells us these things: What does he say? 'See the Lord is coming with thousands upon thousands of his holy ones to judge everyone and to convict all the ungodly of all the ungodly acts they have done, in the ungodly way, of all the harsh words ungodly sinners have spoken against him' (Jude 25).

Picture this man, how he burned against the way of Cain. Here is Enoch, this tremendous example in the line of Seth, preaching God's judgement against this other civilisation and he says God will not permit it to go on; it will come an end. We could do with the like of this sort of preaching today.

Methuselah's Witness

However, God does not leave Himself without a witness. A lot of people have heard of Methuselah, because he is the man who has the longest age that is recorded for us in the Word of God. He lived for 969 years. If you look at the data very carefully and you are good at arithmetic you can work out that the Flood comes in exactly the year that Methuselah dies. Now Enoch was the father of Methuselah. It seems very clear that Enoch knew that the Flood was coming because Methuselah the name he gives his son means 'when he dies judgement.' Presumably Enoch is a man that walks with God and knows something of God's heart and mind and by prophecy he gives his son this particular name. Theologically speaking, Methuselah's great age is not just an accident. God's mercy makes this man live on and truly we can see that 'God waited patiently in the days of Noah,' as Peter reminds us (2 Peter 3 verse 15). God has not forgotten his promise, but our age is like it was in the days before the Flood. God is extending these days as he did those. There are important lessons here to be learned.

Now Methuselah's son was called Lamech and he is not to be confused with the Lamech in the Cainite line. He is a very different man. How different are the words of this Lamech from the words of the other Lamech. Remember the other Lamech with his sword song and all its bitterness and hostility against God? The words of this Lamech of the Sethite line are recorded for us in Genesis 5 verse 28:

> 'When Lamech had lived 182 years he had a son; he named him Noah, for, he said, he will comfort us in the labour and painful toil of our hands caused by the ground the Lord has cursed.'

Two Cultures

The words of the two Lamechs seem to me to highlight the differences between the civilisations founded by Cain on the one hand and Seth on the other. The Cainite civilisation prides itself in its weapons and its arrogance against God; the other civilisation comforts itself in the peace that the son Noah is going to bring. Two civilisations representing the seed of the serpent and the seed of the woman, representing the seed of the ungodly on the one hand and of the Spirit on the other. While the Cainites, by the erection of cities and by the invention and development of commerce and arts, were laying the foundations for the kingdom of the world, the Sethites by their worship are laying the foundations for the Kingdom of God. Nor is it therefore surprising that Cainites increased in power and wealth and in luxury and were superior in almost all earthly advantages to what appears to be a more simple and rural civilisation to the Sethites. For the children of Cain the world was their only home and they sought with all their energy to make an empty existence attractive by the cultivation of earth's natural resources. The Sethites had an interest in God and were not so concerned by the things of the world. But then occurs the calamity which so threatened the godly line, so that ultimately only the Flood could save it.

Understanding the Destruction

It is important that we try and understand this calamity because it is immensely relevant to the way we lead our Christian lives today. First we need to look briefly at the havoc that it caused, and read some of these words of Scripture in Genesis 6.

> 'Now the earth was corrupt in God's sight and was full of violence, God saw how corrupt the world had become, for all the people on earth had corrupted their ways.'

The next verse reports the phrase 'the earth is filled with violence because of them.' We have this picture of the Lord God, seemingly in amazement, looking upon the world he has made and the havoc and catastrophe that man has made of it and all that he sees over the surface of the globe could be summed up in these two words 'corruption and violence.' You may say that perhaps this was the predictable end of the Cainite line. But now this applies to the godly line of Seth. Till now they had been separated, two strands, two civilisations but now the Lord is looking over the whole earth and he is seeing only corruption and violence. The Lord looked further, beyond what was happening outwardly and He looks, as only He can, into the hearts of everyman so that we read in Genesis 6 verse 5 these chilling words:

> 'the Lord saw how great man's wickedness had on the earth had become and that every inclination of the thoughts of his heart was only evil all the time.'

The wickedness was as deep as it was universal. It was as relentless as it was deep. Amidst a vast worldwide population explosion and increasingly rapid advance in technology that they were seeing in that old world, the human race was devoting itself to gross materialism and pleasure. There was a total disregard for God and the result was violence and corruption at every level of society. Moreover such things were open and brazen. We read in Genesis 6 verse 11 'the earth was corrupt in God's sight.' There is something open here which was not being hidden. Men are no longer ashamed of their behaviour, indeed it is quite brazen and open. Perhaps we should pause there and we should recognise something of our own society and the world in which we now live. It puts us in mind again of the Saviour's words 'as it was in the days of Noah so it will be at the coming of the Son of Man.'

Downfall of the Godly Line

To return to the question, 'Where were God's children in all of this? Where were the believers'? Where was the godly line? Where was the Sethite line? In any age they are supposed to be the salt of the earth, but the salt has apparently now lost its saltiness in the times immediately before the Flood, in the days of Noah. Corruption seems to have overtaken the whole earth, without let or hindrance. What had happened to the children of God? The answer comes at the beginning of the chapter 6:

> 'When men began to increase in numbers on the earth and daughters were born to them the sons of God saw that the daughters of men were beautiful and they married any of them that they chose.' (Genesis 6 : 1, 2).

These are important verses telling us about the destiny of the world before the Flood, and we want to be as clear as we possibly can be as to a good and a sound exegesis of these verses, and not be confused on these things. First of all, we ought to formally dismiss an old Jewish legend which still occasionally turns up and reduces this deeply instructive account into a kind of fairytale. This is an approach still occasionally revived even amongst evangelicals.

What am I referring to? Does chapter 6 verse 2 describe some incredible liaison between angels and men? This verse speaks undeniably of marriage and, as the Lord Jesus Christ himself said in a very famous debate with the Sadducees, it is in the very nature of angels that they do not marry. Furthermore, if it was angels that sinned in verse 2 it is very strange justice that then punishes men in verse 3. Again what kind of nature would this bizarre offspring have, the offspring of angels and men? In fact, the introduction of angels here is alien to the whole context of the passage. Rather the passage is absolutely fundamental to our understanding of what was taking place in antediluvian society and which lead directly to the Flood.

Sons of God and Children of Men

We have already seen how the old world developed along two quite distinct and separate lines. This highlights the obvious meaning and relevance of these verses. Just as Adam was described as the 'son of God' in Luke chapter 3, in the same way Old Testament saints who were separated to be His children are described in these words. Indeed, all those who are part of that godly line in the Lord Jesus Christ are described by the Apostle Paul as sons of God. So we find nothing strange about this reference to those of the godly line as being the sons of God. It is deliberately put here to highlight what is going on. On the other hand the term the 'children of men' is used just as frequently in scripture to describe the godless and the unbelieving. So here the writer wants to put in very stark terms the fact that these two civilisations, which had been separated by God for the preservation of the godly line, are now mingling and merging and the whole separation between them is being broken down.

The picture is therefore plain. The Cainite civilisation of chapter 4 and the Sethite civilisation of chapter 5 are now merging in chapter 6 and we come towards that awful godless climax that led God to bring about the Flood. This is why the Bible denounces in such vehement terms any inter-marriage between the children of God and the children of the world. The writers are infused with the truths that emerge from these earlier chapters of Genesis and this is a lesson that they learned very well. Here is the root of the matter, so that when Cain murdered Abel, God drove him away as though to say he must not be allowed to contaminate His children in any way. This is exactly the same picture that you have later on after the Flood when Ishmael was not allowed to remain with Isaac.

So it was that the descendants of Cain, and the descendents of Seth, Abel's replacement remember, developed separately as God intended. In such a way, however degenerate the Cainite civilisation would become, and they certainly did, the Sethite line would be safe. While the Sethites remained faithful nothing could harm them. While that godly line remained, God would not destroy the earth again. This principle is maintained time and time again in Scripture. God will not destroy Sodom provided there are godly men there. God will not destroy Jerusalem so he sends Jeremiah around Jerusalem. Jeremiah is to go to and fro throughout the streets and find just one godly man. God will not destroy men while the godly remnant are there. So, for as long as the Sethite's remained faithful as a separate civilisation, destruction would have been withheld. But here is the tragedy and it is the answer to the original question as to what happened to the godly line—the children of God in the days of Noah.

The Doctrine of Separation

Now we can begin to see how important this doctrine is, because here is this whole doctrine of the separation of people of God from the world. How important it is to try and understand what happened to the Sethites. The sons of God saw that the daughters of men were beautiful and they married any of them they chose. The Sethites took the initiative; we don't know whether they were merely overcome by the temptation of outward beauty or whether they thought that their motives were honourable thinking perhaps they could win the Cainites for the Lord. Perhaps again they felt that some union with them would bring the technological advantages that they were seeing or perhaps they believed that some compromise was going to be necessary anyway for their survival. All we do know that it was an absolute calamity and it gave occasion for the sin that begun with Eve in the garden to reach its full potential in all of its ugliness; it gave the Lord God the only option, as it were in his sight, to bring the Flood.

Again it gives new significance to other words of the Lord Jesus Christ which say that in the days before the Flood people were eating and drinking, marrying and giving in marriage up to the day Noah entered the Ark. Little reason to wonder then why mixed marriages consequently are so condemned from Moses to Nehemiah in the Old Testament age and why marriages in the New Testament church are to be only in the Lord. The most practical lesson from the antediluvian civilisation for Christians today, is that the godly line must always be separate in its most intimate relationships. That was why God separated the Sethites before the Flood, why God separated Israel in the Old Testament age, and why He separates the Church in these gospel days. The principle is epitomised in the marriage bond but extends to every area of life which has moral significance. In the Gospel age every sort of worldliness is considered in the same light.

Again we must say 'as it was in the days of Noah so it will be at the coming of the Son of Man.' The devil is working in exactly the same way today as he tempts believers into unholy alliances of all kinds and sorts. The lesson is that they cannot be touched as long as they remain separate. We can see it in the dreadful decline of moral and ethical standards amongst Christians in their daily walk today. The differences between the lifestyles of believers and unbelievers are today as lacking as they were between the Cainites and the Sethites in the days of Noah. The excuses are, of course, the same and the results are just as devastating.

The Heart of God

Finally, we need to look at the way that the Lord reacted to all this. He grieved. The original says 'He grieved into His heart.' Sin had transformed the world from a paradise to a hell. The heart of God says 'I don't want to do this but I must act in such a way.' If only sin grieved us a fraction as much as it grieves our Holy God. We have noted the long suffering of God in verse 3; He leaves an opportunity for repentance, He waits patiently, but then He removes the Holy Spirit. 'My spirit will not contend with man for ever,' (says the beginning of verse 3) God withdraws the Holy Spirit, just as, of course, the New Testament tells us, in parallel with the days of Noah, that this is what is going to happen in the days before the Son of Man comes again. We learn in 2 Thessalonians that the one who now holds back the secret power of lawlessness is going to be taken out of the way (2 Thess. 6: 7). The best way of interpreting this is that the Holy Spirit Himself will be withdrawn.

So there are many parallels between the last days of this new world and the last days of the old world as it was in the day of Noah. I do honestly believe that if we study the record of these societies from Scripture we find there is much biblical data. The data may not satisfy all our fascination for knowing what exactly went on and exactly how they lived, but, if we are spiritual people, we find there are many spiritual lessons. 'Look! It happened before, so learn the lessons,' we are often saying. Let us learn the lessons of the Antediluvian world as they are plainly recorded for us in Genesis 4, 5 and 6 for our profit and edification.

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Creation in the News

90 not out – Sir Karl Popper

IN THE November 1992 issue of *Scientific American* an interview entitled 'The Intellectual Warrior' appeared on page 20. Sir Karl Popper was reverently questioned by John Horgan. The Austrian-born philosopher of science was 90 years old in July. His credentials as one of the most respected influences upon the core sciences were consistently reinforced throughout the piece, and forcibly so with a recent comment by Sir Herman Bondi in *Nature* that Popper's philosophy is '... still the touchstone of whether one's ideas are scientifically meaningful.'

The power of the principle lies in its deep fundamental simplicity. An idea can only qualify as scientific if it can be tested in such as way that it could be shown to be wrong. The jargon that is commonly used is that a truly scientific hypothesis is 'refutable' or 'falsifiable'. One of the simplest areas in which this can be illustrated is in repairing something that is faulty. If your car suddenly stops and won't start, one forms hypotheses about the fundamentals, which are fuel, air and electric sparks. The first thought is usually that one might have run out of petrol. This is refutable by reference to the fuel gauge, although these devices have been known to tell lies, and one would have to check for the right liquid in the carburettor. However, the scientific method is thwarted by events that only happen once, or very rarely.

If one's car cuts out and then restarts, one can only look for what *might* have caused it. Many of us have horror stories of garages expensively replacing bits on our car one by one, insisting each time that they have fixed the intermittent fault, only to have it occur again. If, on the other hand, after one such 'repair' the fault never happened again, one might never know the real 'cure' was that one had changed one's route to work, and no longer crossed over the railway. It has been shown that interference from overhead electric lines can, under rare circumstances, cause some of the electronics controlling modern engines to temporarily malfunction. This is thought to have contributed to the number of vehicles that have stalled on crossings in the last few years, where the trains are electric. When information is incomplete, it may be impossible to decide between alternative explanations.

Popper has always been able to get to the heart of any matter. In his early years science was dominated by the philosophical school of 'logical positivism'. This holds that restricted truths can be inferred from repeated empirical observations. Popper saw that theories can be true, but he disagreed that we could *know* them to be true.

> 'We must distinguish between truth which is objective and absolute, and certainty, which is subjective.'

Determinism also came under his penetrating scrutiny.

> 'Determinism means that if you have sufficient knowledge of chemistry and physics you can predict what Mozart will write tomorrow. Now this is a ridiculous hypothesis.'

Sir Karl is notorious amongst evolutionists for having said that since the origin of life on this planet is fundamentally unrepeatable, any hypothesis as to how it happened cannot be tested. One can only look for ways in which such ideas might contradict themselves, or other well established scientific principles, such as the laws of thermodynamics. He was equally unhappy about cosmology, given that the origin of the universe is also a once only affair. Thus Popper is particularly censorious about the manner in which the 'Big Bang' hypothesis is promoted, and other (still Godless) alternatives actively suppressed. He was most impressed by the simplest form of the expanding universe model when it was first proposed.

> 'But then came the difficulties, and lots of additional hypotheses were needed.'

He observes that nowadays—

> '... the critical attitude in this field is very rare.'

Comment

Many have tried to say that Popper changed his mind about evolution. Thus, here in a popular science journal was the ideal opportunity for the great man to stop ignorant fundamentalists misusing his ideas once and for all, when describing evolution as a philosophical or religious faith, and not a science. To quote John Horgan:

> 'Although I asked him several times about his current position, he says only that he may have gone "a little too far" in his criticism.'

As for any man or woman, such evident natural wisdom still does not necessarily lead to salvation. The interview reports that Popper currently favours the equally untestable hypothesis from Gunther Wachtershauser, that life began with a biochemical process similar to the Krebs cycle, rather than the replication of substances such as RNA. But as always Popper was rigorously self-consistent.

> 'For God's sake why shouldn't there be a third alternative?'

Is not the irony of these words overwhelming?

P.S.

Cichlid Fish

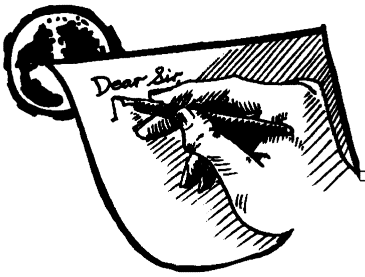
An article in the 13th August issue of the leading science journal *Nature* has reported some surprising data relating to the cichlid fishes of the East African Lakes.

Several hundred species of these fish have been described since their discovery in the late 1800s, and are considered to have 'explosively evolved' in a relatively short period of time, during which they have achieved a startling degree of morphological diversity. However, they are genetically very similar.

Like the peppered moth, this example is sometimes cited in textbooks as evidence of 'evolution in action.' Yet, despite the impressive variations found within these assemblages of species, they remain cichlid fish and have not evolved from one level of complexity to another. It is possible that the cichlid fishes represent a single created Genesis kind (see pages 72–73 of *Science vs. Evolution* by Malcolm Bowden, Sovereign Publications, 1991; readers may also be interested to know that Dr. Arthur Jones, a former BCS Committee Member, wrote his PhD Thesis on this subject: 'Developmental studies and speciation in cichlid fish,' Department of Zoology and Comparative Physiology, Birmingham University Library Diss. S2B72).

In the issue of *Nature* referred to above, Christian Sturmbauer and Axel Meyer of the Department of Ecology and Evolution at the State University of New York report that populations of the *Tropheus* lineage of cichlid fish in Lake Tanganyika exhibit 'surprisingly large genetic divergence,' yet they have not undergone appreciable morphological change. This is the opposite of the situation described above, where morphologically diverse fish were genetically alike. The implications of these surprising findings need to be considered by creationists with expertise in the biological sciences.

P.G.



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The way in which evolution has gained popularity worries many Christians. The concepts of evolution as well as creation have been with mankind for several thousand years, but this posed no problem for believers in creation. In the last century, however, a dramatic change occurred. The scientific community elevated evolution to a supreme level. Eventually they made all knowledge subject to this theory and adherence to evolution became a necessity for one to be recognized as educated.

The Christian world responded in various ways — some completely ignored the problem, others tackled the issues on scientific grounds, but the majority come under the spell of the compromise known as Theistic Evolution. This view brings God and evolution together to solve the problem.

What is Theistic Evolution?

Theistic Evolution is a middle position between blind evolution and fiat creation. The blind evolution accepts nothing except chance to account for life, while fiat Creation accepts nothing except *ex nihilo* creation to account for the same things. According to Theistic Evolution both of these ideas have *some* truth, but that the real truth lies somewhere between them.

This approach sees evolution as the method that God used to create the universe. In other words, He created the matter and the natural laws, and then left them to evolve the order, complexity and life that is seen today.

Different adherents of this theory ascribe a different amount of involvement and interference on God's part. According to some, God's direct involvement ended when He created the raw matter and the laws of nature. The rest was 'natural' evolution according to them. Others maintain that God involved Himself at every stage of evolution through miraculous interferences. There are numerous other viewpoints between and around the above two, and all of them belong to the camp of Theistic Evolution.

Even though the Theistic Evolution camp includes people with diverse and, sometimes, conflicting interpretations, all of them agree upon one essential principle — that God used evolution as a tool to create life.

Does Theistic Evolution Satisfy Anyone?

This theory definitely satisfies those who would like to hold on to both creation as well as evolution. But it disturbs everyone who has studied either evolution or creation seriously. They find that this theory, by attempting to unite two diametrically opposite principles, makes a mockery of both evolution as well as creation.

Evolutionists have repeatedly pointed out the errors of this approach. On the other side Bible-believing scholars have also pointed to the gross distortion inherent in this theory. Two opposing views that stand upon irreconcilable foundations cannot be synthesized into a coherent unit. Consequently, Theistic Evolution satisfies only those whose perception of the evolution/creation issue is woefully inadequate.

Does Theistic Evolution Lead to a High View of the Bible?

Evolution is a materialistic theory. True evolutionists therefore have no place for God or for the Bible. This is not surprising. But Theistic Evolutionists are people who believe in the Bible and who want to respect it as Holy Scripture. Since they do have a definite place for the Bible, they must ensure that whatever they propose should not compromise with a high view of the Scriptures. Unfortunately this is not so !

Since a plain, objective, reading of Genesis rules out any possibility of evolution, the first step of a Theistic Evolutionist is to dilute that impression. Since a direct statement like 'The Creation story is scientifically inaccurate' can startle many by exposing their biases, most of them walk the path more surreptitiously. Hiding their true intention behind cute little statements like 'the Bible is not a science textbook', they paint a beautiful word-picture that amounts to one thing — the creation narratives are not to be taken literally.

Like the expanding breach in a dam, this attitude towards the Scriptures culminates in rejection of major portions of the Bible. In the last five decades, many Christian leaders, groups or movements, that have embarked upon this path have completely lost their commitment to the fundamentals. Obviously, Theistic Evolution does not lead one to a high view of Scriptures. Rather, starting with a diluted view of the Scriptures, it ultimately leads them to a very low view where the Word of God is accommodated to evolution at the slightest demand.

Does Theistic Evolution Stand upon a firm Ground?

Even though many claim that Theistic Evolution aims to discover the truth behind the evolution/creation question, this is not its true direction. The primary purpose of the Theistic Evolution is to accommodate the Bible to the theory of evolution, not the other way round. Accommodating evolution to the Bible is just not possible because this theory has been designed to exclude God from Creation. It stands upon completely atheistic foundations and only natural phenomena are allowed to account for life. It just does not yield to any kind of supernatural involvement.

Consequently, it is not possible to accommodate evolution to the Bible, nor is it possible to find a middle path between two concepts that stand upon opposing foundations. The net result is to accept evolution as a fact of science and accommodate Scripture to it. This is a highly questionable practice because evolution is not a fact of science.

Scientific knowledge is always made up of facts plus theories. Information that has been established without dispute is called 'fact' while information that is yet to be established is usually called a theory. The concept of evolution is only a theory, not a fact. Theories keep on changing, and exactly this has been happening with evolution.

Right from the time of Darwin, proofs have been missing and the mechanism of evolution has been a puzzle. Today there is no hard proof for evolution and there is no single universally accepted mechanism. Evolution was only a hypothesis, and over a century after Darwin it continues to be a hypothesis. Since Theistic Evolutionists are trying to accommodate the Bible to a shaky and ever changing hypothesis, it stands upon a shaky ground. It is without foundation.

Does Theistic Evolution Solve the Problem?

Theistic Evolution is a theory, devised to add respectability to religion. In this generation when science dazzles every onlooker, it is important to look respectable to the scientifically minded. But this is a serious compromise that raises more problems than it tries to solve.

First of all, this theory gives more respect to the theory of evolution than is due. Since evolution is only a theory, there is no need to reconcile it with anything. But in their attempts to do so, they are elevating a mere theory to the level of a fact. This is not only an error, but it also blinds those Christians who might otherwise have recognized the hypothetical character of evolution.

Second, to reconcile two irreconcilable subjects they take great liberties with the Bible. Without some modification or other, evolution and creation cannot be reconciled. Since the evolution-believers will not allow anyone to tamper with evolution, only the Bible is left for this kind of manipulation. Because of this, most Theistic Evolutionists dilute key passage of the Bible. Often this is done to such an extent that the Word of God loses its authority.

Third, the evolution-believing community has clearly rejected all these attempts. Many of them have pointed out that an attempted theistic reconciliation destroys the character of theory of evolution. They have repeatedly rejected all Theistic Evolution proposals.

Fourth, Theistic Evolution tactfully denies a majority of the fundamental doctrines : there was no Garden of Eden, there was no personal Adam or Eve, consequently there was no literal Fall, sin, and spiritual death, etc. It makes God the source of all pain, evil, and even death. All history in the first ten chapters of Genesis is reduced to 'poetry' — a euphemism for 'pious fiction'! In essence, this theory destroys everything on which the historic Christian faith stands.

Clearly, the solutions offered by Theistic Evolution are only illusory. The theory opens up more problems than it attempts to solve.

ORIGINS
• Journal of the Biblical Creation Society •

Origins is published twice a year by the
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ISSN 0953-2773

Printed by Inkon Printers Oldham Street Hyde Cheshire SK14 1LL Tel: 061-368 3444